

*Absence of Terminal Moraines near the Rocky Mountains.*—The absence of a terminal moraine at the extreme western limit of the till, near the foot of the mountains, is a fact worthy of notice, especially in view of the fact that the till of both the earlier and later glacial periods is found to extend approximately the same distance westward, and that there is a narrow belt from thirty to one hundred miles in width that would appear never to have been covered by the ice-sheet.

The most efficient reason that suggests itself to me to account for this state of affairs is that the glacier terminated in one or more lakes, hemmed in between the continental glacier and the mountains and cut off towards the north and south by lateral glaciers flowing eastward in such valleys as those of the Bow and North-Saskatchewan rivers. The morainic accumulation would in that case be carried off either by icebergs or waves and currents and spread out some distance beyond the limit of the till. This would account for the presence of eastern erratics along the very foot of the mountains, and may also account for the high terraces on the sides of such valleys as that of the North Kootanie river. This condition could not, however, have lasted for any great length of time, as no considerable amount of stratified deposits are found in this unglaciated area.

*Western Pebbles.*—The presence of western pebbles in the drift far out on the plains was for a long time an almost insuperable barrier to the general acceptance of the belief in its essentially eastern origin; but the discovery of large areas of Miocene conglomerates, holding these same pebbles, as far east as long. 107° W., has almost entirely overcome this objection in furnishing new centres of distribution from which these pebbles have been carried. Still it is not improbable that some of the drift in the extreme western part of the drift-covered country is derived from the mountains, having been carried down by the local glaciers mentioned above.

*Direction of Ice Flow.*—In speaking of the general direction of flow of the western portion of the great continental mer de glace it has been customary to regard it as having advanced southwestward from the Archean area—and certainly this was the direction of glacial motion when the ice first reached the Winnipeg basin,—but recent investigations have shown that in two cases, at all events, this direction was not sustained, viz., in the great Winnipeg valley, and in the valley of the upper Assiniboine, west of the Duck and Riding mountains. In both these cases the direction of flow was southward or southeastward in the direction of the trend of the valleys, and parallel to the main axis of the Rocky Mountains. This direction was in all probability sustained by the glacier all the way across the Canadian plains, and we have thus one reason for its great extent, as the ice was moving from a wide area of distribution to a much narrower area of dissipation, and there would be a constant tendency to make up for the loss from the surface by a crowding in from the sides.